

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In Re Application of:	Grondahl	Conf. No.:	6985
Serial No.:	10/624,338	Art Unit:	3677
Filed:	22 July 2003	Docket No.:	GRON-0002
Title:	SEAL ASSEMBLY AND ROTARY MACHINE CONTAINING SUCH SEAL	Examiner:	Kyle, Michael J.

Mail Stop AF  
Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

PRE-APPEAL BRIEF CONFERENCE REQUEST

Sir:

Applicant respectfully requests that a panel of experienced examiners perform a detailed review of appealable issues for the above-identified patent application pursuant to the Pre-Appeal Brief Conference Pilot Program. Applicant submits that the above-identified application is not in condition for appeal because the Office has failed to establish a prima facie case of obviousness based on an error in facts. Claims 1-26 are pending in this application. Claim 25 has been withdrawn from consideration.

As argued in Applicant's 08 June 2006 Amendment, the Office's rejection of claims 1, 3-5, 8-17, 19, and 21-23 under 35 U.S.C. 103(a) as allegedly being unpatentable over U.S. Patent No. 6,059,526 to Mayr in view of U.S. Patent No. 6,220,602 to Webster et al. is clearly improper and without basis because (1) the Office has misinterpreted the teachings of Mayr [see, e.g., 08 June 2006 Amendment at 10-17] and (2) as a consequence, there is no teaching, suggestion, or motivation to combine or modify the teachings of Mayr or Webster et al.

The Office alleges that Mayr discloses “a seal assembly comprising a brush seal (30-32) with a plurality of staggered seal members, and a support (33-35) coupled to the seal, having a portion facing the high pressure side of the seal. A free portion of the seal (31)...contacts a distal end [of the support] [shown in figure 1b] in the pressurized operative state, and is out of contact in an unpressurized inoperative state [see fig 1a].” Final Office Action at 2-3, emphasis added.

First, as explained in Applicant’s 08 June 2006 Amendment, FIG. 1 of Mayr, which the Office alleges illustrates the Mayr device in an inoperative state, shows the free portion of the seal in contact with both distal ends of sheet metal housing 33. Thus Mayr fails to teach “the free portion [of the seal]...is out of contact with the distal end [of the support portion] in an unpressurized inoperative state,” as recited in claims 1 and 19.

Second, FIG. 1b of Mayr, which the Office alleges illustrates the Mayr device in an operative state, shows bristles 30 out of contact with a distal end of sheet metal housing 33 residing below bristles 30 and in contact with crimp bead 34. Neither of these changes in contact teach the limitations of the rejected claims. In fact, they teach the opposite. That is, Mayr teaches bristles out of contact with a distal end of a support device in an operative state while the rejected claims recite a free end of a leaf seal in contact with a distal end of a support portion in an operative state. In making and sustaining the rejection, the Office has, inter alia, read out of the claims “a support coupled to a low pressure side” of the leaf seal.

Third, as explained in Applicants amendments of 21 December 2005 and 08 June 2006, the teachings of Webster et al. are inapplicable to the teachings of both Mayr and the present invention. In an operative state, Webster et al. teach a deliberate forcing of the “leaf” seal away from the shaft in order to provide clearance. “In operation the repulsive force between the bristles, or leaves, 128 and the magnet or electrically conducting member 130 pushes the bristles, or leaves, 128 away from the

shaft 32 to form a clearance to reduce wear of the bristles, or leaves, 128 and the shaft 32.”

Webster et al. at column 7, lines 60-64 [emphasis added].

Contrarily, Mayr teaches a deliberate maintenance of contact between a brush seal and a rotor. Thus, Webster et al. teach away from Mayr. In fact, Applicant asserts that if one were to combine Webster et al.'s teaching of a radially-oriented “leaf” seal with Mayr's teaching of a brush seal in contact with a rotating shaft without provision for seal element resilience, the result would be frictional heating and instant deformation failure.

As argued in Applicant's 08 June 2006 Amendment, the Office's rejection of claims 2, 18, 20, and 26 under 35 U.S.C. 103(a) as allegedly being unpatentable over Mayer in view of Webster et al. in further view of U.S. Patent No. 4,813,608 to Holowach et al. is clearly improper and without basis because (1) as noted above, the Office has misinterpreted the teachings of Mayr, (2) the Office has misinterpreted the teachings of Holowach et al. (see, e.g., 08 June 2006 Amendment at 17-18), and (3) as a consequence, there is no teaching, suggestion, or motivation to combine or modify the teachings of Mayr, Webster et al., or Holowach et al.

The Office alleges that it would have been obvious to modify Mayr and Webster et al. as taught by Holowach et al. “such that the layers are made of materials with different coefficients of thermal expansion, so that the differing rates of expansion causes the seal to bend, forming a tight air seal between the structures.” Final Office Action at 4.

As argued in Applicant's 08 June 2006 Amendment, each of the arguments made above with respect to Mayr is equally applicable to this rejection. However, Applicant does not claim the use of materials having different coefficients of thermal expansion in order to form “a tight air seal between the structures,” as alleged by the Office. In fact, the structure of Applicant's leaf seal, for use in sealing moving components, as opposed to the sealing of static structures such as that of Holowach et al.,

yields a response opposite that of Holowach et al., i.e., seal members curl upward, increasing clearance with a moving surface to be sealed against, thereby relieving seal friction and possible destruction.

As argued in Applicant's 08 June 2006 Amendment, the Office's rejection of claims 6 and 7 under 35 U.S.C. 103(a) as allegedly being unpatentable over Mayr in view of Webster et al. in further view of U.S. Patent No. 5,042,823 to Mackay et al. is clearly improper and without basis because (1) as noted above, the Office has misinterpreted the teachings of Mayr and (2) as a consequence, there is no teaching, suggestion, or motivation to combine or modify the teachings of Mayr, Webster et al., or Mackay et al. See, e.g., 08 June 2006 Amendment at 10-18.

As argued in Applicant's 08 June 2006 Amendment, the Office's rejection of claim 24 under 35 U.S.C. 103(a) as allegedly being unpatentable over U.S. Patent No. 6,353,263 to Gail et al. in view of Webster et al. is clearly improper and without basis because (1) the Office has misinterpreted the teachings of Gail et al. (see, e.g., 08 June 2006 Amendment at 18-19) and (2) as a consequence, there is no teaching, suggestion, or motivation to combine or modify the teachings of Gail et al. or Webster et al.

The Office alleges that "Gail discloses the angle between portions (6) and (7) to be 'approximately' ninety degrees (column 4, lines 6). Because this is an 'approximate' angle, it includes angles that are not ninety degrees, which would provide a frustoconical shape. Also, for this reason, the free portion is angled relative to both a longitudinal axis and all radial axes of a component to be sealed against." Final Office Action at 5.

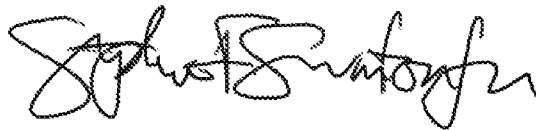
Applicant asserts, however, that the Office's second conclusion (free portion angled relative to both a longitudinal axis and all radial axes) does not follow from its first (portions 6 and 7 angled at 'approximately' ninety degrees). That is, if portions 6 and 7 of the Gail et al. device are angled at ninety degrees, portion 6 must not be parallel to the longitudinal axis of the component to be sealed against in

order for the Office's second conclusion to be true. In contrast, if portion 6 is parallel to the longitudinal axis of the component to be sealed against, in order for the Office's second conclusion to be true, the angle between portions 6 and 7 cannot be ninety degrees. Applicant asserts that the Office's first conclusion has nothing to do with the axes of the component to be sealed against and has failed to identify any teaching of Gail et al. that would sustain its second conclusion. That is, Gail et al. do not teach variability in the angle of portion 6 relative to the longitudinal axis of the component to be sealed against.

In view of the foregoing, Applicant submits that the Office has failed to establish a prima facie case of obviousness, that this application is not in condition for appeal, and that this application should either be allowed as is, or re-opened for further prosecution. With respect to features in the dependent claims not specifically referenced herein, the dependent claims are believed to be allowable based on the above-described arguments, as well as for their own additional features.

Applicant respectfully submits that the application is not in condition for appeal. Should the examining panel believe that anything further is necessary to place the application in better condition for allowance or for appeal, they are requested to contact Applicant's undersigned attorney at the telephone number listed below.

Respectfully submitted,

A handwritten signature in black ink, appearing to read "Stephen F. Swinton, Jr.", written in a cursive, stylized script.

Stephen F. Swinton, Jr.  
Reg. No. 53,661

Date: 21 September 2006  
Hoffman, Warnick & D'Alessandro LLC  
75 State Street, 14th Floor  
Albany, New York 12207  
T: 518.449.0044  
F: 518.449.0047